

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000416**Date Inspected:** 02-Sep-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	Ye Yong Jun, Cui Yi Ru, Gu Xin			CWI Present:	Yes	No
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No N/A
				Delayed / Cancelled:	Yes	No N/A
Bridge No:	34-0006			Component:	MOCK UP	

Summary of Items Observed:

Elevation 77:

Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding being performed for the fabrication of the Mock Up at elevation 77 and elevation 114. The QA Inspector randomly observed ZPMC CWI Ye Yong Jun performing 100% visual inspection on the root pass of weld joint (WJ) MA2-1 of skin plate A. The QA Inspector performed a random visual inspection of WJ MA2-1 and found two small slag inclusions. The QA Inspector marked the location of the indications and ZPMC CWI Ye Yong Jun directed ZPMC welder Li Ming Yang to remove same. The areas were reinspected and the slag inclusions appeared to have been removed. The QA Inspector observed ZPMC welders Li Ming Yang and Zhang Binghua, utilizing the flux cored arc welding process to weld side 1 and 2 of WJ MA2-1, attaching longitudinal stiffener piece mark MP1-1 on to Skin Plate A. Both welders were utilizing ZPMC weld procedure specification WPS-B-T-2232-TC-U5-F in the 2G or horizontal groove position. The QA Inspector observed ZPMC CWI Ye Yong Jun monitoring preheat, welding amperage and welding voltage. The QA Inspector also performed random verification of the above weld parameters and documented same. The welding amperage was 297 amps with a corresponding welding voltage of 31 volts and a travel speed of 317 millimeters per minute for side 1 and 309 amps, 31.2 volts with a travel speed of 311 millimeters per minute for side 2. Other work observed by the QA Inspector included the fit up and tack welding of longitudinal stiffeners piece marks MP5-1, MP5-2 and MP6-1 to skin plate E. ZPMC welders Yang Lei and Zhai Quingshan were utilizing ZPMC SMAW weld procedure specification WPS-B-P-2212-TC-U5b to place the tack welds. The QA Inspector also observed ZPMC NDT Technicians Cai Xin Xin and Zhou Dong Yun performing 100% magnetic particle (MT) inspection of the tack welds in WJ's MA-3 through MA4-10 attaching longitudinal stiffeners MP7-1, MP7-2, MP7-3 and MP9-1 to skin

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plate C. The QA Inspector observed ZPMC welders Xin Meng and Liu Xie, utilizing the flux cored arc welding process at WJ's MUSA-MA4-7 and MUSA-MA4-8 attaching longitudinal stiffener piece mark MP7-2 on to skin plate C. Both welders were utilizing ZPMC weld procedure specification WPS-B-T-2232-TC-U5-F in the 2G or horizontal groove position. The QA Inspector observed ZPMC CWI Gu Xin Zhai monitoring preheat, welding amperage and welding voltage. The QA Inspector also performed random verification of the above weld parameters and documented same. The welding amperage was 285 amps with a corresponding welding voltage of 31.5 volts and a travel speed of 295 millimeters per minute for WJ MUSA-MA4-7 and 295 amps, 32 volts with a travel speed of 306 millimeters per minute for WJ MUSA-MA4-8. The QA Inspector also observed ZPMC NDT Technician Cai Xin Xin performing 100% MT inspection of the root in WJ's MUSA-MA4-7 and MUSA-MA4-8. The QA Inspector performed a 20% random MT inspection of WJ's MUSA-MA4-7 and MUSA-MA4-8. There appeared to be no indications. ZPMC CWI Gu Xin Zhai accepted the root passes of the above WJ's. The QA Inspector observed the run off tabs being removed from skin plate D.

Elevation 114:

The QA Inspector observed ZPMC welder Han Changhou, utilizing the submerged arc welding (SAW) process to weld the splice between skin plate B piece marks MA102 and MP1015-1 at WJ MUSC-MA102-2. Mr. Changhou was utilizing ZPMC SAW weld procedure specification WPS-B-T-2321-B-P3-S-1 in the 1G or flat groove position. The QA Inspector observed ZPMC CWI Cui Yi Ru monitoring preheat, welding amperage and welding voltage. The QA Inspector also performed random verification of the above weld parameters and documented same. The welding amperage was 490 amps with a corresponding welding voltage of 31.3 volts and a travel speed of 394 millimeters per minute. The QA Inspector also observed ZPMC NDT Technician Zhou Dong Yun performing 100% MT inspection of the root in WJ MUSC-MA102-2. The QA Inspector performed a 20% random MT inspection of WJ MUSC-MA102-2. There appeared to be no indications. ZPMC CWI Cui Yi Run accepted the root pass of WJ MUSC-MA102-2.

The QA Inspector observed skin plate D piece marks MA110-1 and mp1016-1 being fit up, run off tabs being attached and the area of WJ MUSC-MA110-2 being preheated in preparation for placing the tack welds. The following photograph provides additional detail.



Summary of Conversations:

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ZPMC CWI Cui Yi Ru informed the QA Inspector that elevation 114 skin plate B would be flipped over to work on WJ MUSC-MA102-1, and that it would be ready for MT by Caltrans QA sometime around 1500. Mr. Cui also informed the QA Inspector that as soon as the preheat was within parameters, that the tack welds would be placed in the weld seam between piece marks MA110-1 and MP1016-1 at WJ MUSC-MA-110-2 of elevation 114 skin plate D.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Franco,Charlie	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
